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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,626	12/16/2003	Norikazu Ota	033211-041	2678

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EXAMINER

CAO, ALLEN T

ART UNIT

PAPER NUMBER

2652

DATE MAILED: 02/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/735,626	Applicant(s) OTA, NORIKAZU	
	Examiner Allen T. Cao	Art Unit 2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/16/03</u> . | 6) <input type="checkbox"/> Other: _____ |

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takao et al (US. 6,455,174 B1).

Takao et al (particular figure 13) discloses a flying type thin film magnetic head having a write head element 122 with a coil conductor 108 and a yoke (see figure 20 which discloses that the write head includes coil conductors and a yoke), wherein a write current flowing through the coil conductor; an overcoat layer (a portion of the body 121 which disposed between 126a and the write element 122) laminated on the write head; and a heat block layer 126a formed in the overcoat layer as set forth in claim 1.

Takao et al does not clearly disclose that the heat conductivity of the heat block layer is lower than that of the overcoat layer.

However, Takao et al also discloses that the heat block layer 126a is constructed by using ceramic having a low coefficient of thermal conductivity to reduce the influence of the heat generated by the magnetic coil 108 (column 17, lines 30-35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to indicate that the heat block layer of Takao et al has the heat conductivity to be lower than that of the overcoat layer.

The rationale is as follows: One of ordinary skill in the art would have been motivated to modify/indicate that the heat block layer of Takao et al has the heat conductivity to be lower than that of the overcoat layer in order to block heat transferred to the overcoat layer, thus heat is transferred to the magnetic head element so that that the thermal expansion of the magnetic head element section (not the overcoat layer) toward the ABS becomes extremely easy, therefore, to improve the write characteristics. Additionally, the layer 126a is named as "heat block"; therefore, it would have been obvious to one of ordinary skill in the art recognized that the layer 126a blocks heat from the coil 108, thus the layer 126a must some how has the thermal coefficient conductivity lower the overcoat layer in order to "block" the heat from the coils.

Regarding claim 2, Takao et al discloses that the heat block layer is formed to cover a region with an area larger than that of a region on which the coil conductor is formed.

Regarding claim 3, Takao et al discloses that the heat block layer is formed to cover over the coil conductor.

Regarding claim 4, Takao et al discloses that the heat block layer is formed in parallel with a plane on which the coil conductor is formed.

Regarding claim 7, Takao et al also discloses a heater coil 108 formed below the heat block layer for generating heat when the head is in operation (column 17, lines 40-41).

Regarding claim 8, Takao et al discloses that the heat block layer is a resist layer (heat "block").

Regarding claim 9, Takao et al further discloses a read head element 123.

Regarding claims 5 and 6, Takao et al does not disclose that a distance between the heat block layer and an air bearing surface is less than 15 μm (claim 5) or less than 7.5 μm (claim 6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to locate the heat block layer of the magnetic head of Takao et al with a distance of either less than 15 μm (claim 5) or less than 7.5 μm (claim 6) from the air bearing through an obvious routine lab experimentation and/or optimization to improve the heat blocking characteristics, thus improve read/write characteristics.

Response to Arguments

3. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen T. Cao whose telephone number is (571) 272-7569. The examiner can normally be reached on Mon - Thurs (7:30 - 6:00).

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4.

5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allen Cao
Primary Examiner

AC
February 14, 2006